

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

### Listing of Claims:

- 1           1.       (Currently Amended) A method for determining a network  
2 topology in a peer-to-peer network, the method comprising:  
3               performing a tracerouting operation to obtain a traceroute from a first  
4 client to a directory server, wherein a traceroute is a map of a path through which  
5 a packet travels between the first client and the directory server, including  
6 addresses of routers through which the packet travels;  
7               determining a MAC address of a gateway of the first client;  
8               sending the traceroute and the MAC address to the directory server from  
9 the first client; and  
10              using the traceroute at the directory server to build a router ~~graph~~; graph,  
11 wherein the router graph represents ~~the~~ topology of the peer-to-peer  
12 ~~network; and network;~~  
13               wherein the directory server can use the MAC address to determine if any  
14 other clients are on a same subnet as the first client.
  
- 1           2.       (Currently Amended) The method of claim 1, further comprising:  
2               performing a second tracerouting operation between the first client and a  
3 second client; and  
4               sending the second traceroute to the directory server.
  
- 1           3.       (Cancelled)

1           4.     (Original) The method of claim 1, further comprising:  
2                 sorting a list of addresses for routers received at the directory server from  
3     the traceroutes; and  
4                 using the sorted list to determine which addresses are assigned to which  
5     routers, wherein each router has two or more network interfaces and each  
6     interface has an address.

1           5.     (Original) The method of claim 1, further comprising using the  
2     router graph to optimize data transfer within the peer-to-peer network.

1           6.     (Previously Presented) The method of claim 1, further comprising  
2     classifying the first client as a member of a router group based on a first public  
3     address found in the traceroute, wherein the router group is a collection of clients  
4     that communicate through a common router.

1           7.     (Original) The method of claim 1, further comprising removing  
2     information from the router graph if the information has not been validated for a  
3     specified period of time.

1           8.     (Currently Amended) A computer-readable storage medium storing  
2     instructions that when executed by a computer cause the computer to perform a  
3     method for determining a network topology in a peer-to-peer network, the method  
4     comprising:  
5                 performing a tracerouting operation to obtain a traceroute from a first  
6     client to a directory server, wherein a traceroute is a map of a path through which  
7     a packet travels between the first client and the directory server, including  
8     addresses of routers through which the packet travels;

9           determining a MAC address of a gateway of the first client;  
10           sending the traceroute and the MAC address to the directory server from  
11   the first client; and  
12           using the traceroute at the directory server to build a router ~~graph; graph;~~  
13           wherein the router graph represents ~~at the~~ topology of the peer-to-peer  
14   ~~network; and network;~~  
15           wherein the directory server can use the MAC address to determine if any  
16   other clients are on a same subnet as the first client.

1           9.       (Currently Amended) The computer-readable storage medium of  
2   claim 8, wherein the method further comprises:  
3           performing a second tracerouting operation between the first client and a  
4   second client; and  
5           sending the second traceroute to the directory server.

1           10.      (Cancelled)

1           11.      (Original) The computer-readable storage medium of claim 8,  
2   wherein the method further comprises:  
3           sorting a list of addresses for routers received at the directory server from  
4   the traceroutes; and  
5           using the sorted list to determine which addresses are assigned to which  
6   routers, wherein each router has two or more network interfaces and each  
7   interface has an address.

1           12.      (Original) The computer-readable storage medium of claim 8,  
2   wherein the method further comprises using the router graph to optimize data  
3   transfer within the peer-to-peer network.

1           13.     (Currently Amended) The computer-readable storage medium of  
2     claim 8, wherein the method further comprises classifying the first client as a  
3     member of a router group based on ~~at~~the first public address found in the  
4     traceroute, wherein the router group is a collection of clients that communicate  
5     through a common router.

1           14.     (Original) The computer-readable storage medium of claim 8,  
2     wherein the method further comprises removing information from the router  
3     graph if the information has not been validated for a specified period of time.

1           15.     (Currently Amended) An apparatus for determining a network  
2     topology in a peer-to-peer network, the apparatus comprising:  
3                 a tracerouting mechanism configured to perform a tracerouting operation  
4     to obtain a traceroute from a first client to a directory server, wherein a traceroute  
5     is a map of a path through which a packet travels between the first client and the  
6     directory server, including addresses of routers through which the packet travels;  
7                 a determination mechanism configured to determine a MAC address of a  
8     gateway of the first client;  
9                 an upload mechanism configured to send the traceroute and the MAC  
10    address to the directory server from the first client; and  
11                 a graph building mechanism configured to use the traceroute at the  
12    directory server to build a router graph:graph,  
13                 wherein the router graph represents the topology of the peer-to-peer  
14    network: andnetwork;  
15                 wherein the directory server can use the MAC address to determine if any  
16    other clients are on a same subnet as the first client.

1           16.     (Currently Amended) The apparatus of claim 15, wherein the  
2     tracering mechanism is further configured to perform a second tracering  
3     operation between the first client and a second ~~client~~-client, and is further  
4     configured to send the second traceroute to the directory server.

1           17.     (Cancelled)

1           18.     (Original) The apparatus of claim 15, further comprising:  
2             a sorting mechanism configured to sort a list of addresses for routers  
3     received at the directory server from the traceroutes; and  
4             a determination mechanism configured to use the sorted list to determine  
5     which addresses are assigned to which routers, wherein each router has two or  
6     more network interfaces and each interface has an address.

1           19.     (Original) The apparatus of claim 15, further comprising an  
2     optimization mechanism configured to use the router graph to optimize data  
3     transfer within the peer-to-peer network.

1           20.     (Currently Amended) The apparatus of claim 15, further  
2     comprising a classification mechanism configured to classify the first client as a  
3     member of a router group based on ~~at the~~ first public address found in the  
4     traceroute, wherein the router group is a collection of clients that communicate  
5     through a common router.

1           21.     (Original) The apparatus of claim 15, further comprising a removal  
2     mechanism configured to remove information from the router graph if the  
3     information has not been validated for a specified period of time.